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AN ANALYTICAL STUDY OF PRIMARY SCHOOL TEACHERS' VIEWS TOWARDS RESEARCH ORIENTED LEARNING APPROACH

*SINIF ÖĞRETMENLERİNİN ARAŞTIRMAYA DAYALI ÖĞRENME
YAKLAŞIMI HAKKINDAKİ GÖRÜŞLERİNE YÖNELİK
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Abstract

Research-oriented learning is a learning approach enabling students to do scientific research, work actively in the process, revise, reinforce, learn by living and doing, take responsibility, boost their self-confidence, put what they have learned into practice and solve the problems they have encountered in their daily lives. The aim of this research is to determine the views of primary school teachers about research-oriented learning approach by considering some demographic variables. The sample of the research constitutes 253 primary school teachers working under Provincial Directorate of National Education in the city centre of Antalya in 2015-2016 school years. General screening models, one of the descriptive screening methods, and mixed model were used in the research. Validity and reliability studies of 22-item 'Survey of Research-Oriented Learning Approach' used in the research were conducted and Cronbach's Alpha internal reliability coefficient was calculated as 0.89. As a consequence of the research, the result has been reached that according to the primary school teachers, research-oriented learning approach develops students' problem solving skills and lets students enter in to a certain process, but purposes and gains about subjects are not determined by teachers. Moreover, such results have been reached in the research that depending on demographic variables, there is no a statistically significant difference of opinions regarding the approach between female and male primary school teachers according to gender variable.

Keywords: Research-Oriented Learning, Learning By Living and Doing, Active Learning, Reinforcement, Primary School Teacher

Öz

Araştırmaya dayalı öğrenme, öğrencilerin bilimsel olarak araştırma yap-

malarını, aktif olarak süreç içinde çalışmalarını, tekrar yapmalarını, pekiştirmelerini, yaparak yaşayarak öğrenmelerini, sorumluluk almalarını, öz güvenlerini geliştirmelerini, öğrendiklerini günlük yaşama uygulayabilmelerini ve günlük yaşamda karşılaştıkları problemleri çözebilmelerini sağlayan bir öğrenme yaklaşımıdır. Bu araştırmanın amacı; sınıf öğretmenlerinin araştırmaya dayalı öğrenme yaklaşımı hakkındaki görüşlerini bazı demografik değişkenleri de göz önünde bulundurarak belirlemeye çalışmaktır. Araştırmanın örneklemini, 2015-2016 öğretim yılında Antalya il merkezinde İl Milli Eğitim Müdürlüğüne bağlı olarak çalışan 253 sınıf öğretmeni oluşturmaktadır. Araştırmada, betimsel tarama yöntemlerinden birisi olan genel tarama modeli ve karma model kullanılmıştır. Araştırmada kullanılan ve 22 maddeden oluşan 'Araştırmaya Dayalı Öğrenme Yaklaşımı Anketi'nin geçerlik ve güvenirlik çalışması yapılmış ve anketin Cronbach's Alpha iç güvenirlik katsayısı 0.89 olarak hesaplanmıştır. Araştırma sonucunda, sınıf öğretmenlerinin araştırmaya dayalı öğrenme yaklaşımının, öğrencilerin problem çözme yeteneğini geliştirdiği, öğrenciyi belli bir sürece sürüklediği ancak konularla ilgili amaçların ve kazanımların öğretmenler tarafından belirlenmediği sonucuna ulaşılmıştır. Ayrıca araştırmada yaklaşımla ilgili olarak bayan sınıf öğretmenleri ile erkek sınıf öğretmenleri arasında cinsiyet değişkenine bağlı olarak istatistiksel açıdan anlamlı düzeyde bir görüş farkının olmadığı gibi sonuçlara da ulaşılmıştır.

Anahtar Kelimeler: Araştırmaya Dayalı Öğrenme, Y yaparak Yaşayarak Öğrenme, Aktif Öğrenme, Pekiştirme, Sınıf Öğretmeni

INTRODUCTION

Research-oriented learning is a process which includes activities, experiments, inventions students do and design on their own or with their friends, and enables knowledge to be meaningful and permanent (Tatar and Kuru, 2006). According to Woolfolk (2001), research-oriented learning is an approach that teacher offers a complicated situation, and students try to solve this problem by collecting information and examining its results. To Bozkurt (2012), research-oriented learning is a learning strategy which is very different from traditional education that students only remember the information obtained from teachers, books, structured experiments and activities. In points of view Wu and Hsieh's (2006), research-oriented learning means determining causal relationships, identifying the examination process, using data for evidences, and also evaluation statements by research skills necessary for students to develop their scientific explanations. Research-oriented learning is teaching-learning processes including learners learn, ask questions, do research in detail and create new meanings, comments and knowledge in the end (AL, 2004; Wyatt, 2005).

Research-oriented learning approach's philosophical bases depend on the progressivism philosophy of education based on pragmatism, and its theoretical bases depend on Dewey's steps of the scientific thinking, and this approach student-centered coincides with the main principles of progressivism (Çalışkan, 2008). Research-oriented learning approach enables a student to become active in class, solve problems, explore information on his own, interpret it, be collaborator and discuss and share his ideas, and is an approach appropriate to enhance higher level thinking skills and aiming to make acquisitions (Bozkurt, 2012; Manlove, Lazonder and De Jong, 2006; Oliver, 2007; Ikpeze and Boyd, 2007; Lim, 2001). In this approach, teachers, in the leading position, do not convey information directly to students, but provide them with access to information, and encourage their students to work collaboratively and try to train them as individuals who learn learning (Tatar and Kuru, 2006; Orlich, Kauchak, Harder, Pendergrass, Callahan, Keogh and Gibson, 1990; DeBoer, 1991; Özkartal, 2015; Keller, 2001; Llewellyn, 2002; Luke, 2004). Furthermore, in research-oriented learning, students' managing skills and process neces-

sary for creating concepts and facts prepares them to be lifelong learners (Justice, Rice, Roy, Hudspith and Jenkins, 2009).

In research-oriented learning approach, students are active during process, teachers are in the leading position, and it gives both teachers and students many advantages thanks to its some features. It also provides to develop scientific process skills such as especially discussing subjects to be learned and hypothesizing (Kolkhorst, Mason, DiPasquale, Patterson and Buono, 2001). This approach encourages children to use scientific process skills, the basis of research-oriented learning, in order to find answers to questions (Saracho and Spodek, 2008: 19; Tosa, 2009, p. 22; Özkartal, 2013; Fang, Lamme and Pringle, 2010, p. 3). In addition, the approach is so important because students learn the process of conducting scientific research, do the research, put scientific knowledge they have obtained during this process into practice in their daily lives and improve their skills related to them (Ören, Ormancı, Babacan, Koparan and Çiçek, 2011).

Research-oriented learning approach enables students to work as scientists by using scientific research methods. In this approach, students take an active role in studies of reinforcement, of repeating and of affirmation, and also, in planning, implementing and evaluating process during their research (Tatar and Kuru, 2006). Students can explain cause and effect relationships of events regarding subjects they have learned deeply, draw a conclusion from their observations and plan activities by making predictions (Eltinge and Roberts, 1993).

Research-oriented learning approach providing students with an opportunity to use scientific process skills and put knowledge they have obtained from in-class activities and out-of-class activities into practice in their daily lives, and supporting learning by living and doing, is based on cognitive

learning, and enables students to play an active role in studies of repeating and of affirming manually, and also, in planning, implementing and evaluating process (Tatar, 2006; Tatar and Kuru, 2006). In this approach, students are encouraged to learn by collecting data with research activities by living and doing, analysing them and thanks to these analyses, finding solution to complicated everyday problems (Çelik, Şenocak, Bayrakçeken, Taşkesenligil and Doymuş, 2005).

According to Çalışkan and Turan (2010), in the process of research-oriented learning approach, teachers enable students to take opportunities for new explorations and researches by asking them exploratory questions. These questions teachers have asked guide, direct students, make them think and enable them to find truth. In this approach, in contrast to teachers in traditional learning, teachers are individuals who do not answer questions, but ask questions.

Researchers state in their researches that research-oriented learning approach is composed of certain stages (Colburn, 2010; Babadoğan and Gürkan, 2002; Edelson, 1998, p. 78; Goldman, Radinsky, Tozer and Wink, 2010, p. 299; Khasnabis, 2008, p. 17; NRC, 1996, p. 122; Rushton, 2008, p. 6). These stages show similarity to or parallelism with each other in general. Especially in researches, drawing students' attention to problem has been intended primarily, and then the effort has been made to include students in the process by setting a goal or goals. Like many approaches, the final stage of research-oriented learning approach has been determined as evaluation. Some basic features of research-oriented learning approach have been determined by Babadoğan and Gürkan (2002) as follows;

- 1) Creating a framework for thinking depending on student,
- 2) Determining goals and target behaviours,

- 3) Making teacher a leader of classroom who has control over,
- 4) Estimating students' reactions to a subject,
- 5) Turning a classroom into a learning laboratory,
- 6) Acting in a manner that takes care of each student personally.

When features are examined carefully, it is seen that student is at the centre, and learning turns around the student, and teacher guides the student and is a leader who has control over. When the researches on research-oriented learning approach were examined, it was determined that there are three types of research in this approach. Colburn (2000) determined these types of research as structured research, directed research and open research.

As a consequence of literature studies that have been done, the knowledge obtained about research-oriented learning approach was evaluated, and the effort was made to determine deficiencies in the field by considering these studies. In this study, considering the deficiencies regarding the approach and some demographic variables, the effort was made to determine the views of the primary school teachers on research-oriented learning approach.

METHOD

Population and Sample

The population of this research constitutes all primary school teachers working under Antalya Provincial Directorate of National Education, and the sample of the research constitutes 253 primary school teachers working under Provincial Directorate.

Research Model

This research was done in order to determine the opinions of the primary school teachers working under Directorate of National Education in the city centre of Antalya about research-oriented learning approach by considering demographic variables of gender,

educational background, professional seniority and age. For this purpose, researches on the subject and surveys and scales, used in these researches, were scanned by the researcher, and a new 'Survey of Research-Oriented Learning Approach' based on the researches of 'perceptions of educators toward research-oriented learning approach' done by Çalışkan (2008), and of 'the effect of research-oriented learning approach on students' academic success and scientific process skills in science education' done by Bozkurt (2012), was developed by the researcher and used in the research. At first, a field study was done for the survey used in the research, and then open ended questions about the subject were asked to the primary school teachers working actively, and from the answers given to these questions, a sketch of 30-item survey was created. After necessary analytical studies, the 22-item survey was formed by removing 8 items from the survey, and after the opinions of five academic members experts in the field of educational sciences about the survey were received, and the survey was put into final form by making required regulations.

Validity and reliability studies of 'Survey of Research-Oriented Learning Approach' used in the research were conducted and Cronbach's Alpha internal reliability coefficient of the 22-item survey was determined as 0.89. The answers of the teachers participating in the research to the survey depending on the demographic variables were calculated by using Anova test which is an F test, t-test and one-way variance analysis with the help of SPSS 20 statistical software package. The survey used in the research consists of five point likert type 22 items including (1) Strongly Disagree, (2) Disagree, (3) Undecided, (4) Agree and (5) Strongly Agree. Overall assessment of the survey used in the research was determined as follows (Sarigöz and Demiralay, 2015; Cengiz, Sarigöz and Dönger, 2015):

$$RO = \frac{HV - LV}{NO} = \frac{5 - 1}{5} = 0.8$$

RO: Range of Options
 HV: The Highest Value
 LV: The Lowest Value
 NO: Number of Options

1.00 – 1.80: Strongly Disagree
 1.81 – 2.60: Disagree
 2.61 – 3.40: Undecided
 3.41 – 4.20: Agree
 4.21 – 5.00: Strongly Agree

The survey was applied to 253 primary school teachers working at primary school, and the effort was made to determine the views and opinions of the teachers about research-oriented learning approach depending on some demographic variables. In the research, 'general screening model' which is one of the descriptive screening methods, and 'mixed model' were used. General screening model is the screening arrangements carried out on a group, sample group or a paradigm or the entire universe in order to draw conclusion about the universe composed of numerous elements (Karasar, 2010, p. 79). General screening model is a research model used to specify the types of information such as peo-

ple's attitudes, beliefs, values, habits and opinions (Mcmillan and Schumacher, 2001). Mixed model includes collecting qualitative and quantitative data regarding same basic facts in a study or a series of studies, and analysing and interpreting the collected data (Leech and Onwuegbuzie, 2007).

FINDINGS

In this part of the research, the demographic data about the teachers participating in the research, and the obtained data about the survey used in the research, and statistical findings and observations regarding these data are presented.

Table 1. t-test analysis results of the teachers' answers to the Survey of Research-Oriented Learning Approach according to gender

Gender	N	\bar{X}	Ss	Sd	t	p
Female	122	92,418	4,563	251	,783	,435
Male	131	92,863	4,468			

p>0.05

When the data in Table 1 were examined, from the answers of the primary school teachers participating in the research to the Survey of Research-Oriented Learning Approach, it can be said that there is no a statisti-

cally significant difference of opinions (p> .05) between female and male primary school teachers depending on gender by looking at the t-test analysis results.

Table 2. Anova test analysis results of the teachers' answers to the Survey of Research-Oriented Learning Approach according to professional seniority

Profess Seniori- ty	N	\bar{X}	Sd	Varia. Source	Sum of Squa	df	Mean Squa	F	p	Sign. Diff. (Anova)
1) 1-5	24	92,42	4,20	Btw. Gr.	8,94	4	2,235	,108	,98	
2) 6-10	41	92,61	4,74	Wit. Gr.	5118,75	248	20,640			
3) 11-15	58	92,88	4,58	Total	5127,69	252				
4) 16-20	51	92,82	4,80							
5) 21- +	79	92,46	4,34							
Total	253	92,65	4,51							

p>0.05

According to the data in Table 2, from the answers of the primary school teachers to the Survey of Research-Oriented Learning Approach, it can be said that there is no a statistically significant difference of opinions between the primary school teachers who

have professional seniority of 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21 years and over in terms of research-oriented learning depending on the variable of professional seniority by looking at the Anova test results [$F_{(108)}$, $p_{(98)}$; $p > .05$].

Table 3. Anova test analysis results of the teachers' answers to the Survey of Research-Oriented Learning Approach according to educational background

Educational Background	N	\bar{X}	Sd	Varia. Source	Sum of Squares	df	Mean Square	F	p	Sign. Diff. (Anova)
1) Fac. Edu.	134	92,84	4,68	Btw. Gr	25,97	3	8,65	,423	,98	
2) Fac.Art.&Sci.	79	92,46	4,34	Wit. Gr	5101,71	249	20,48			
3) Master/Doct.	27	91,96	4,18	Total	5127,68	252				
4) Other	13	92,31	4,68							
Total	253	92,65	4,51							

p>0.05

According to the data in Table 3, from the answers of the primary school teachers to the Survey of Research-Oriented Learning Approach, it can be said that there is no a statistically significant difference of opinions between the primary school teachers graduated from Faculty of Education, Faculty of Arts

and Sciences, Master's Program/Doctorate Program, and other schools in terms of research-oriented learning depending on the variable of educational background by looking at the Anova test results [$F_{(423)}$, $p_{(98)}$; $p > .05$].

Table 4. Anova test analysis results of the teachers' answers to the Survey of Research-Oriented Learning Approach according to age variable

Age	N	\bar{X}	Sd	Varia. Source	Sum of Squares	df	Mean Square	F	p	Sign. Diff. (Anova)
1) 20-26	17	92,77	3,75	Btw. Gr.	25,700	4	6,425	,312	,87	
2) 27-33	43	92,44	4,83	Wit. Gr.	5101,991	248	20,573			
3) 34-40	62	93,02	4,58	Total	5127,692	252				
4) 41-47	60	92,55	4,50							

5) 48- +	71	92,95	4,52
Total	253	92,25	4,51

p>0.05

According to the data in Table 4, from the answers of the primary school teachers to the Survey of Research-Oriented Learning Approach, it can be said that there is no a statistically significant difference of opinions between the primary school teachers who are

20-26 years old, 27-33 years old, 34-40 years old, 41-47 years old, 48 years old and over in terms of research-oriented learning depending on the age variable by looking at the Anova test results [$F_{(312),p(,870)}$; $p>,05$].

Table 5. Arithmetic averages of the answers of the primary school teachers participating in the research to the Survey of Research-Oriented Learning Approach

Survey Items of Research-Oriented Learning Approach	\bar{X}	Skill Level
10. It develops problem solving skill.	4.48	Strongly Agree
17. It develops the ability of expressing.	4.47	Strongly Agree
7. It lets learners enter into a certain process.	4.46	Strongly Agree
9. It develops the ability to give an opinion.	4.44	Strongly Agree
8. It enables learners to learn the use of technology.	4.43	Strongly Agree
12. It provides the effective use of materials.	4.42	Strongly Agree
11. It develops the ability to do scientific research.	4.38	Strongly Agree
18. It provides an opportunity to learn cooperatively.	4.32	Strongly Agree
14. It provides the effective use of sense organs.	4.31	Strongly Agree
13. It improves observation skill.	4.29	Strongly Agree
22. It increases academic success.	4.25	Strongly Agree
16. It provides an opportunity to share ideas.	4.19	Agree
21. It provides restructuring the knowledge in mind.	4.17	Agree
20. It increases the interest in science.	4.16	Agree
3. It creates the attitude of scientific thinking attitude.	4.12	Agree
19. It develops the skill of discussing.	4.11	Agree
1. It puts students at the centre.	4.07	Agree
4. It guides learners.	4.05	Agree
15. It improves critical thinking skill.	4.04	Agree
2. Teachers determine purposes and gains.	3.95	Agree
6. It organizes an educational environment according to learners.	3.93	Agree
5. Reactions to a subject are previously estimated.	3.61	Agree

General Arithmetic Mean: 4.211

According to the data in Table 5, from the arithmetic averages of the answers of the primary school teachers to the survey items, it

was determined that article 10 stating 'It develops problem solving skill' ($\bar{X}=4.48$), article 17 stating 'It develops the ability of expressing'

(\bar{X} =4.47), article 7 stating '*It lets learners enter into a certain process*' (\bar{X} =4.46), and article 9 stating '*It develops the ability to give an opinion*' (\bar{X} =4.44) are the items with the highest arithmetic averages in the survey. In the light of the answers given to the survey items, it can be said that according to the primary school teachers, research-oriented learning approach develops students' problem solving skills and skills of expressing or speaking, lets learners enter into a certain process, and improves students' abilities to give an opinion.

According to the data in Table 5, from the arithmetic averages of the answers of the primary school teachers to the survey items, it was determined that article 5 stating '*Reactions to a subject are previously estimated*' (\bar{X} =3.61), article 6 stating '*It organizes an educational environment according to learners*' (\bar{X} =3.93), and article 2 stating '*Teachers determine purposes and gains*' (\bar{X} =3.95) are the items with the lowest arithmetic averages in the survey. In the light of the teachers' answers given to the survey items, it can be said that the primary school teachers' opinions about research-oriented learning approach are not expected in terms of some items, for example, reactions to subjects are previously estimated, and it organizes educational environments according to students, and purposes and gains regarding subjects are determined by teachers.

CONCLUSION AND RECOMMENDATION

Conclusion

This research was done with the aim of determining the opinions of the primary school teachers working under Directorate of National Education in the city centre of Antalya about research-oriented learning approach. Also, in the research, the effort was made to determine whether the opinions of the teachers about research-oriented learning approach differ according to the demographic variables of gender, of educational background, of professional seniority and of age or

not.

From the t-test analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it was concluded that there is no a significant difference between female and male teachers depending on gender. Therefore, the result has been reached that female and male teachers have similar opinions regarding research-oriented learning approach. In a study on research-oriented learning approach done by Kuru and Tatar (2006), a significant difference could not be found between students in the 7th grade depending on gender. In a research done by Çalışkan (2008), it was determined that female teachers have higher perception regarding research-oriented learning approach than male teachers.

From the t-test analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it was concluded that there is no a statistically significant difference of opinions between the primary school teachers who have professional seniority of 1-5 years, 6-10 years, 11-15 years, 16-20 years, 21 years and over in terms of research-oriented learning approach depending on the variable of professional seniority. Therefore, the result has been reached in the research that the primary school teachers, who have various professional seniorities, have similar opinions regarding research-oriented learning approach. In a research done by Çalışkan (2008), the result was reached that teachers have low perception towards research-oriented learning approach as long as professional seniority of teachers increases.

From the analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it was concluded that there is no a statistically significant difference of opinions between the primary school teachers graduated from Faculty of Education, Faculty of Arts and Sciences, Master's Pro-

gram/Doctorate Program, and other schools in terms of research-oriented learning approach depending on the variable of educational background. Therefore, the result has been reached in the research that the primary school teachers who have various educational backgrounds, have similar opinions regarding research-oriented learning approach.

From the analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it can be said that there is no a statistically significant difference of opinions between the primary school teachers who are 20-26 years old, 27-33 years old, 34-40 years old, 41-47 years old, 48 years old and over in terms of research-oriented learning approach depending on the age variable by looking at the Anova test results. Therefore, the result has been reached in the research that the primary school teachers have similar opinions regarding research-oriented learning approach according to the age variable.

From the analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it was determined that the items with the highest arithmetic averages are that 'It develops problem solving skill', 'It develops the ability of expressing', 'It lets a learner enter into a certain process' and 'It develops the ability to give an opinion'. In the light of the answers of the primary school teachers to the survey items and the conversations with them, it can be said that research-oriented learning approach develops students' problem solving skills and skills of expressing or speaking, lets learners enter into a certain process, and improves students' abilities to give an opinion.

From the analysis results of the answers of the teachers participating in the research to the Survey of Research-Oriented Learning Approach, it was determined that the items with the lowest arithmetic averages

are that 'Reactions to a subject are previously estimated', 'It organizes an educational environment according to learners' and 'Teachers determine purposes and gains'. In the light of the answers of the primary school teachers to the survey items and the conversations with them, it can be said that their opinions are not expected in terms of some items, for example, reactions to subjects are previously estimated, and it organizes educational environments according to students, and purposes and gains regarding subjects are determined by teachers.

In the light of the teachers' answers to the Survey of Research-Oriented Learning Approach, it was determined that the survey's general arithmetic average coincides with Strongly Agree by a narrow margin. It shows that research-oriented learning approach satisfies the expectations of the teachers to a large extent but not quite.

Recommendation

At first, doing a research effectively, its process and method, what to take into account while conducting a research should be practically taught students through courses or activities because research-oriented learning approach is based on the fact of doing research.

In order to effectively use research-oriented learning approach, other teaching methods and techniques or teaching strategies in education, teachers who will get into classes should take formation courses related to lessons they will give at least. They should not hesitate to get help from especially academicians at universities and from experts in essential institutions and organizations when they have a difficulty with training.

Research-oriented learning approach should be implemented in an effective manner in all fields of education. For this reason, research-oriented learning approach should be added to all courses of the curriculum as subject or unit. In this way, all students will

have knowledge and experience in many fields such as using technology and doing research.

Computer lessons or technology lessons should be given to students who cannot take these lessons, the number of computer lessons students take, should be increased at a basic level, and various technology lessons should be given to students beginning from primary school because research-oriented learning approach is based on using technology.

In researches that will be done, all problems about the use of technology such as deficient use or incorrect use should be detected and overcome by identifying how effectively students use technology.

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